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Occultation of η Virginis, Mag. 3½, observed by Capt. Shadwell, R.N., January 26th, 1856.

	h m s	
Immersion	17 56 32·1	Portsmouth Mean Time.
Emersion	19 10 59·7	

Observations very satisfactory.

R. N. College, Portsmouth.

Observations of Venus near her Inferior Conjunction.

By Lieut. Brodie.

"I took much interest in closely watching *Venus* for some little time preceding its inferior conjunction, and have several sketches in the Observatory book of its relative appearances. I was unfortunately away from home on the day of the inferior conjunction, but my last observation was on October 4th, four days after the conjunction, when the following entry occurs in the Observatory book:—

"Observed *Venus*, which has passed its inferior conjunction four days; it is very finely crescented, indeed, and its definition very sharp and clear, the horns extending fully a semidiameter of the planet.

	° ′
The Distance of the Planet from the Sun at the time of this Observation was	9 45
Distance at Time of Conjunction*	8 15
Δ	1 30

At the close of the meeting the President made some remarks on the increasing importance of the subject of variable stars and the desirableness of multiplying observations of those interesting objects. This was a branch of astronomy which was more especially adapted to the amateur, since a good telescope of moderate power was all that was required for the purpose of observation. M. Argelander, who had distinguished himself by his researches on the periods of variable stars, had employed a method of investigation which was not only very effective in detecting nice gradations of light, but also possessed the advantage of being easily practised by any person who was desirous of prosecuting obser-

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* Mr. Brodie, from a hasty reading of the statement attributed to Mr. Airy, at page 232, vol. xv. of the *Monthly Notices*, was led to suppose that the words there used had reference to *daylight* observations of *Venus;* and he mentions that it was for the purpose of testing the remark of the Astronomer Royal, as thus interpreted by him, that he was induced to observe the planet so near the time of conjunction. It will be seen that the words of Mr. Airy plainly refer to the observations of *Venus when the sun is beneath the horizon*, the only time when there exists any probability of discovering a faint crepuscular light in the planet indicative of an atmosphere, the sole object for which the observation of the planet near its inferior conjunction was originally suggested.—Editor.

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vations of this kind. It consisted in selecting a few small stars in the immediate vicinity of the variable object, and employing them as standards of comparison for the purpose of ascertaining the quantity of light which the star emitted while in the course of passing through its successive stages of brightness. It is manifest that the results obtained by this method would be independent of the state of the atmosphere, since any fluctuation arising from this cause would equally affect both the variable star and the star of comparison. It would be, of course, indispensable to its successful application that the stars selected for comparison should be of different magnitudes, and that their light be found by attentive observation to be sensibly steady.

The Hypothesis of Otto Struve respecting the Gradual Increase of Saturn's Ring, discussed with reference to the Manuscripts of Huyghens and the Accuracy of modern Observations. By Professor Kaiser.[*]

In this memoir Professor Kaiser examines the grounds of the hypothesis recently advanced by M. Otto Struve relative to the existence of a continual variation of *Saturn's* rings. According to that hypothesis, while the diameter of the planet and the exterior diameter of the outer bright ring have constantly preserved the same values, the interior diameter of the inner bright ring has been constantly diminishing; consequently, the system of bright rings is gradually increasing in breadth, and thereby approaching nearer and nearer to the body of the planet.

The author, after some preliminary remarks, gives an exposition of the numerical results upon which M. Otto Struve founded his hypothesis. Assuming that the exterior diameter of the outer ring has always exceeded the diameter of the planet by 22″·20, M. Struve found for the breadth of the rings, the breadth of the dark space included between them and the planet, and the ratio of the latter of these two quantities to the former, the results contained in the following table:—

Observer.	Year.	Breadth of Rings.	Breadth of Dark Space.	Breadth of Dark Space. / Breadth of Rings.
		″	″	
Huyghens	1657	4·6	6·5	1·41
Huyghens and Cassini	1695	5·1	6·0	1·18
Bradley	1719	5·7	5·4	0·95
Herschel	1799	5·98	5·12	0·86
W. Struve	1826	6·74	4·36	0·64
Encke and Galle ..	1838	7·06	4·04	0·57
O. Struve	1851	7·43	3·67	0·49

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[*] De Stelling van Otto Struve omtrent het breeder worden van den Ring van Saturnus getoetst aan de handschriften van Huijgens en de naaukeurigheid der latere waarnemingen door F. Kaiser. (Verslagen en Mededeelingen der Koningljke Akademie van Wetenschappen. Deerde Deel, Amsterdam, 1855.)

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